



The efficiency of indicator-based local search for multi-objective combinatorial optimisation problems

Submitted by Matthieu Basseur on Tue, 02/10/2015 - 19:34

Titre	The efficiency of indicator-based local search for multi-objective combinatorial optimisation problems
Type de publication	Article de revue
Auteur	Basseur, Matthieu [1], Liefooghe, Arnaud [2], Le, Khoi [3], Burke, Edmund-K. [4]
Editeur	Springer Verlag
Type	Article scientifique dans une revue à comité de lecture
Année	2012
Langue	Anglais
Date	Jan-04-2012
Numéro	2
Volume	18
Titre de la revue	Journal of Heuristics
ISSN	1381-1231
Résumé en anglais	<p>In the last few years, a significant number of multi-objective metaheuristics have been proposed in the literature in order to address real-world problems. Local search methods play a major role in many of these metaheuristic procedures. In this paper, we adapt a recent and popular indicator-based selection method proposed by Zitzler and Künzli in 2004, in order to define a population-based multi-objective local search. The proposed algorithm is designed in order to be easily adaptable, parameter independent and to have a high convergence rate. In order to evaluate the capacity of our algorithm to reach these goals, a large part of the paper is dedicated to experiments. Three combinatorial optimisation problems are tested: a flow shop problem, a ring star problem and a nurse scheduling problem. The experiments show that our algorithm can be applied with success to different types of multi-objective optimisation problems and that it outperforms some classical metaheuristics. Furthermore, the parameter sensitivity analysis enables us to provide some useful guidelines about how to set the parameters.</p>
URL de la notice	http://okina.univ-angers.fr/publications/ua7623 [5]
DOI	10.1007/s10732-011-9178-y [6]
Lien vers le document	http://link.springer.com/article/10.1007%2Fs10732-011-9178-y [7]
Titre abrégé	J Heuristics

Liens

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Publié sur *Okina* (<http://okina.univ-angers.fr>)